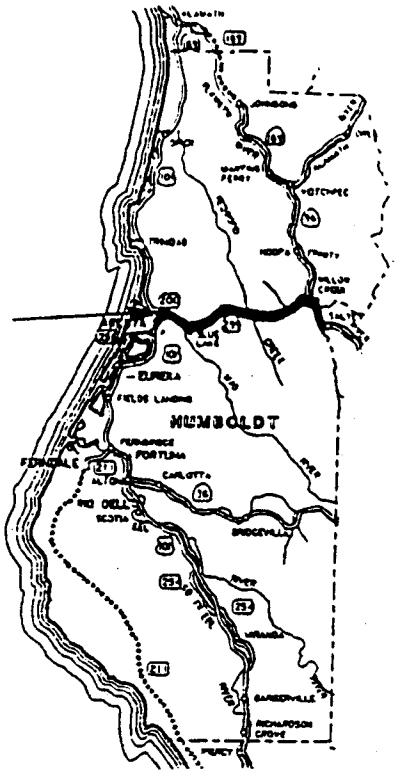
ROUTE

CONCEPT REPORT



ROUTE 299 CORRIDOR

01-HUM-299-KP 0.0/69.2 (PM 0.0/43.0)

All information in this Route Concept Report is subject to change as conditions change and new information is obtained.

I approve this Route Concept Report to guide today's route development decisions and/or recommendations.

Approval Recommended:

F A Wythe 1/28/98

F. A. WYTHE Date
District Division Chief
Project Coordination

Approval Recommended:

Cheryl S. Willis 1/30/98

CHERYL S. WILLIS Date
District Division Chief
Planning

Approved:

Rick Knapp 2/10/98

RICK KNAPP Date
District Director
District 1

JANUARY 1998

Statement of Planning Intent

The Route Concept Report (RCR) is a planning document which describes the Department's basic approach to development of a given transportation route or corridor. Considering reasonable financial constraints and projected travel demand over a 20-year planning period, the RCR defines appropriate transportation facilities for each route or corridor. The objective of the effort is to provide a better basis for the development of the State Transportation Improvement Program (STIP), and for determination of the appropriate concept for future transportation projects.

Route Concept Reports are prepared by District staff in cooperation with local and regional agencies. They will be updated as necessary as conditions change or new information is obtained.

Route Concept Reports are a preliminary planning phase that lead to subsequent programming and the project development process. As such, the specific nature of proposed improvements (e.g., roadway width, number of lanes, access control) may change in the project development stage.

Assumptions

The following assumptions form the basis for the development of Route Concept Reports:

1. The relative importance of State highways in the District can generally be established based on functional classification. In general, higher priority is given to major improvements on principal arterial routes as compared to minor arterials and collectors.

2. State highways with improvement concepts must have realistic concept levels of service. Concept levels of service are not established on State highways which will only be maintained.

3. Level of service and capacity calculations are based on the 1994 Highway Capacity Manual and on field observations at or near the peak hour (approximately the 30th to 50th highest hour).

4. Determinations of future level of service for State highways in District 1 are based in part upon Statewide and Regional forecasts of State highway travel developed by Caltrans.

5. Route concepts are generally uniform for an entire route or corridor, unless there is a major change in function along the route or corridor.

6. Major projects will be developed to meet standards acceptable to the Federal Highway Administration in order to receive Federal funding for projects. Otherwise, a "design exception" will be prepared during the project development process.

7. Safety projects will be pursued on an on-going basis in order to be responsive to safety concerns as they are identified.

8. No planned or programmed improvements were assumed to be complete in analyzing present and future operating conditions. The Route Concept Report details programmed improvements in the 1996 STIP, with all costs in 1996 dollars.

9. An environmental document will not be required for Route Concept Reports. However, individual improvement projects identified in Route Concept Reports will follow the appropriate environmental process as required by law.

ROUTE CONCEPT REPORT

ROUTE 299

01-HUM-299-KP 0.0/69.2 (PM 0.0/43.0)

I. ROUTE CONCEPT AND RATIONALE

FACILITY CONCEPT

THE CONCEPT FOR ROUTE 299 FROM ROUTE 101 TO THE HUMBOLDT/TRINITY COUNTY LINE IN HUMBOLDT COUNTY IS 2-LANE CONVENTIONAL HIGHWAY WITH INTERMITTENT PASSING LANES.

Route 299 is the major west-east route serving the California North Coast. It is a principal arterial serving interregional and interstate traffic, with heavy use by logging and lumber trucks and tourist traffic in the summer months. It links Route 101 at the City of Arcata with Route I-5 at the City of Redding, and is considered extremely important to the development potential of Humboldt Bay as a port.

However, the need for route improvement must be tempered with a concern for the high cost of improving a route traversing rugged mountainous terrain, in terms of both dollars and environmental impacts.

LEVEL OF SERVICE CONCEPT

THE SELECTED CONCEPT LEVEL OF SERVICE FOR ROUTE 299 IS "C".

Some segments may require additional passing lanes to maintain this concept level of service through the 20-year period.

CONCEPT FOR GOODS MOVEMENT

DISTRICT 1 SUPPORTS IMPROVEMENTS TO ACCOMMODATE SURFACE TRANSPORTATION ASSISTANCE ACT (STAA) TRUCKS ON ROUTE 299.

Goods movement over Route 299 between the cities of Arcata and Redding is considered essential to the future development of Humboldt Bay harbor. While there are no restrictions to STAA trucks on Route 299 in District 1, these longer trucks are restricted from using a portion of Route 299 between the community of Weaverville and the City of Redding (Buckhorn Grade) in District 2. Implementation of District 2's Route Concept will eliminate this barrier.

CONCEPT FOR REHABILITATION

ROUTE 299 SHOULD BE MAINTAINED AND REHABILITATED AS NECESSARY.

Based on current standards, existing roadway widths on Route 299 should be adequate to allow rehabilitation without widening. However, consideration should be given to widening in conjunction with pavement rehabilitation projects where necessary to provide an adequate paved shoulder.

Where current traffic volumes are 3,001 to 6,000 vehicles per day, these standards specify a desirable minimum roadway width of 12 meters, but do allow rehabilitation at the present width if the roadway is at least 8.4 meters wide. Most of Route 299 in District 1 falls within this AADT range and has a minimum width of at least 8.4 meters. A design exception may be requested if the roadway does not meet the minimum width requirement, and physical, financial, or environmental considerations preclude widening. However, if feasible, shoulder widening to accommodate bicycles should be provided.

SAFETY AND OPERATIONAL IMPROVEMENT CONCEPTS

No segments of Route 299 have accident rates exceeding one and one-half times the Statewide average based on similar facilities, and safety does not appear to be a significant factor in considering the need for improvement for the majority of the route. Safety improvements at spot locations will be considered as necessary. Intelligent Transportation System (ITS) improvements may also be considered to improve the safety and operation of Route 299.

Bridge replacement, storm damage and operational improvement projects will also be considered as necessary. These projects, in addition to safety projects, should be constructed to appropriate State and or Federal standards.

In the late 1980's, Caltrans barrier striped two-lane highways to comply with Federally mandated standards. This reduced the number of passing opportunities (and the level of service) on most two-lane State highways, including portions of Route 299. The District has programmed one passing lane project on Route 299 in Humboldt County (HUM-299-KP 66.1/68.4 or PM 41.1/42.5) to mitigate the impact of barrier striping, and is considering others.

ROUTE CONCEPT FUNCTION

This Route Concept should serve as a guide for long range planning of Route improvements. It recognizes financial considerations and competing priorities both on this Route and other routes in the District. Efforts have been made to consider local and regional concerns regarding development of the Route. Further, the concept is reasonably consistent with the Caltrans District 2 concept for Route 299 at the District boundary. The District 2 concept for Route 299 in Trinity County is 2-lane expressway facility with passing lanes and a "C" level of service, while our concept for Route 299 in adjacent Humboldt County is 2-lane conventional highway, also with passing lanes and a "C" level of service.

II. CORRIDOR PRESERVATION

It is anticipated that Route 299 will remain a conventional 2-lane highway with passing lanes. No substantial long-term right of way needs are anticipated. Existing right of way on this Route generally approaches or exceeds the 40 meter minimum right of way width standard for new 2-lane highways.

III. ALTERNATIVE CONCEPTS CONSIDERED

While a 4-lane freeway/expressway facility concept was initially considered for Route 299, such a concept did not appear realistically attainable due to financial and environmental constraints. Route 299 in District 1 previously had a lower level of service concept (D), based on level of service calculations that showed one segment already operating at an "E" level of service and another operating at a "D" level of service. Due to the difficulty of calculating level of service on a 2-lane highway with extensive passing lanes, level of service appears to have been underestimated. Level of service determinations for this Route Concept report were based on field observations at or near the peak hour.

IV. ROUTE ANALYSIS

DESCRIPTION

In District 1, Route 299 originates at Route 101 in the northern portion of the City of Arcata, and extends easterly, bisecting Humboldt County. Route 299 in District 1 is approximately 67.6 kilometers (42 miles) in length and has a post mile description of 01-HUM-299-KP 0.0/69.2 or PM 0.0/43.0. Ultimately, this Route leads to Redding, Alturas, and the California/Nevada border.

ROUTE PURPOSE

Route 299 links the Pacific Coast with the northern Sacramento Valley, connecting to Route I-5 at the City of Redding. Route 299 is the primary east-west transportation corridor for north coast and northern Sacramento Valley traffic, and is functionally classified as a principal arterial. It provides the northern Sacramento valley with access to the Port of Humboldt Bay.

Route 299 has significant interregional and interstate importance, and is included in the National Highway System (NHS), the Strategic Highway Network (STRAHNET), and the Interregional Improvement Program as both a "high emphasis" and "focus" route. It is an important Route for commerce, especially timber products. Most of Route 299 in District 1 is designated as the Trinity River Scenic Byway, a Forest Service Scenic Byway. This Route carries substantial volumes of recreational traffic, particularly in the summer months, serving as access to the wild and scenic Trinity River and adjacent National Forest land.

ROUTE SEGMENTATION

Route 299 is segmented for System Planning Purposes as shown in Table I on the following page:

TABLE I
ROUTE 299 SEGMENTATION

SEG #	HUM-299 KP	HUM-299 PM	DESCRIPTION
1	0.0/9.5	0.0/R5.9	Route 101 to Blue Lake
2	9.5/62.4	R5.9/38.8	Blue Lake to Willow Creek
3	62.4/69.2	38.8/43.0	Willow Creek to Hum/Tri Co. line

Land Use

Land Use adjacent to Route 299 in District 1 is generally forest products related, with some agricultural land, primarily between the Cities of Arcata and Blue Lake. While some future development (primarily tourist oriented recreational) is likely, little overall change in land use is anticipated. Route 299 currently experiences substantial volumes of recreational traffic, and this traffic is expected to continue to increase.

Locally high trip generation in the vicinity of the Cities of Arcata and Blue Lake is expected to increase moderately in the future.

Existing Facilities

Route 299 between Route 101 and the City of Blue Lake is a gently rolling 4-lane freeway through the Mad River Valley. The remainder of the Route in District 1 is 2-lane conventional highway/expressway (with a number of passing lanes), which traverses mountainous terrain and includes many steep grades. The Route crosses two major summits in District 1; Lord Ellis summit (elevation 683 meters or 2,240 feet) and Berry Summit (elevation 866 meters or 2,840 feet), both of which are subject to snow accumulation during the winter.

Table II below summarizes existing facility characteristics for the Route 299 corridor in District 1:

TABLE II
EXISTING FACILITY CHARACTERISTICS
ROUTE 299

SEG #	HUM-299 KP	HUM-299 PM	DESCRIPTION	EXISTING FACILITY
1	0.0/9.5	0.0/R5.9	Route 101 to Blue Lake	4-F
2	9.5/62.4	R5.9/38.8	Blue Lake to Willow Creek	2-C/E w/Passing Ln.
3	62.4/69.2	38.8/43.0	Willow Creek to Hum/Tri Co. line	2-C

(F = Freeway, E = Expressway, C = Conventional Highway)

EXISTING FACILITY CHARACTERISTICS (continued)
ROUTE 299

Functional Classification:	Principal Arterial
Freeway and Expressway System:	Yes
Eligible for Scenic Highway Designation:	Portion (Route 101 to Route 96)
Subsystem of Highways for Extra Legal Loads (SHELL)	Yes
STAA Trucks Allowed:	Portion (Route 101 to Route 96)
Strategic Highway Network:	Yes
National Highway System:	Yes
Public Airports Served:	None directly, Hoopa Airport via Rte. 96
Rail Service	NWP (Arcata to Korbel near Blue Lake)
Intercity Bus Service:	None
Intersecting State Highway Routes:	101, 200, 96
Park and Ride Lots	None

As previously noted, Existing right of way on this Route generally approaches or exceeds the 40 meter minimum right of way width standard for new 2-lane highways. Most right of way is owned by the State, with some easements and special use permits.

Operating Conditions

Present and future operating conditions, including traffic volume ranges, level of service, and volume to capacity ratios for both existing and anticipated future conditions are shown on Map 1 on the following page. Further information regarding specific operating and geometric conditions may be found in Caltrans source documents (e.g., the State Highway Inventory, the State Highway Log, and Traffic Volumes on California State Highways, etc.).

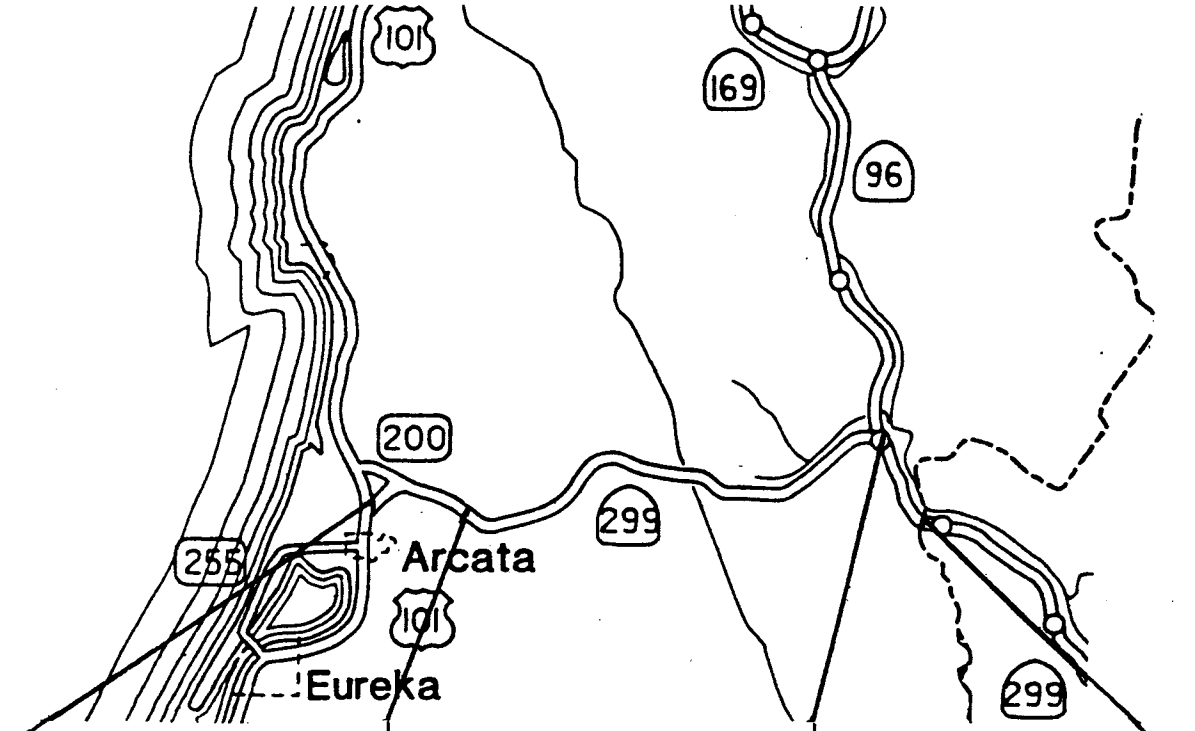
The Route 299 Rail Corridor

The Arcata and Mad River (Annie and Mary) railroad spur of the North Western Pacific Railroad, owned and operated by the North Coast Railroad Authority, parallels Route 299 from the City of Arcata to the Community of Korbel, near the City of Blue Lake. This spur historically provided rail service primarily for forest products producers located in the lower Mad River valley. It is not currently operating, and there are no plans to reopen the line at this time.

Programmed Improvements

Only one major improvement project is programmed in the 1996 State Transportation Improvement Program for Route 299 in District 1. A passing lane project in Humboldt County near the Humboldt/Trinity County line (HUM-299-KP 66.1/68.4 or PM 41.1/42.5) with an estimated cost (including right of way) of $1,208,000 is scheduled for construction in the 1998/99 fiscal year. In addition to projects programmed in the State Transportation Improvement Program, three additional projects on Route 299 are programmed in the 1996 State Highways Operations and Protection Plan. These projects address bridge and highway rehabilitation/restoration.

MAP 1
PRESENT AND FUTURE OPERATING CONDITIONS
ROUTE 299



HUM-299- KP 0.0/R9.5 PM 0.0/R5.9	HUM-299- KP R9.5/62.4 PM R5.9/38.8	HUM -299 KP 62.4/69.2 PM 38.8/43.0
Terrain: Rolling Gradeline: Rolling	Terrain: Mountainous Gradeline: Moderate/Steep	Terrain: Mountainous Gradeline: Rolling to Flat
Existing (1997) 4-lane Freeway 3.6 m lanes 22.6 m paved width 4,000 - 11,600 AADT 10% - 18% Trucks "A" LOS V/C = 0.10 Accident Rate = less than 1.5 times the Statewide average	**Existing (1997)** 2-lane Conv./Exp. w/PL 3.6 m lanes 7.9 - 19.5 m paved width 3,150 - 4,000 AADT 7% - 18% Trucks "C" LOS V/C = 0.50 Accident Rate = less than 1.5 times the Statewide average	**Existing (1997)** 2-lane Conventional 3.6 m lanes 7.9 - 19.5 m paved width 3,450 - 4,750 AADT 12% - 19% Trucks "C" LOS V/C = 0.41 Accident Rate = less than 1.5 times the Statewide average
Future (2020) 6,200 - 17,900 AADT "A" LOS V/C = 0.15	**Future (2020)** 4,900 - 6,200 AADT "D" LOS V/C = 0.74	**Future (2020)** 5,350 - 7,300 AADT "D" LOS V/C = 0.65

ROUTE CONCEPT

- **The concept for Route 299 in District 1 (Humboldt County) is 2-lane conventional highway with intermittent passing lanes, and a "C" concept level of service.**

V. ENVIRONMENTAL CONSIDERATIONS

Principal environmental concerns along Route 299 in District 1 include:

- Wild and Scenic Rivers: Route 299 from the Community of Willow Creek to the Humboldt/Trinity County line follows the Trinity River, a Wild and Scenic River.

- Salmon and Steelhead Habitat: Sections of Route 299 parallel Mad River, Willow Creek, and the Trinity River. These waters are all critical salmon and Steelhead spawning and nursery habitat. Water quality is a major concern.

- Archaeological Sensitivity: Areas between the community of Willow Creek and the Humboldt/Trinity County line are known to be archaeologically sensitive.

- Rare and Endangered Species: Rare and endangered species may be found at locations along Route 299, including near Lord Ellis Summit, Berry Summit, and along the Trinity River.

VI. REGIONAL TRANSPORTATION PLANNING

Humboldt County Association of Governments (HCAOG) identifies Route 299 as the second most important interregional State Highway Route in the County. It characterizes the level of service on this Route as being "generally acceptable", and states that capacity increasing improvements are not required.

VII. AREAS OF CONCERN

The following considers areas of concern on Route 299 based on an analysis of level of service and accident history:

1. A segment is considered to be a "level of service concern" if the concept level of service (LOS) will not be achieved under present or future traffic conditions, or the segment operates at capacity during peak hour.

2. A segment is considered to be a "safety concern" if the total accident rate for a five year period for that segment exceeds one and one-half times the Statewide average for similar facilities.

Based on these criteria, future level of service concerns were identified on the following segments:

- HUM-299-KP R9.5/62.4 (PM R5.9/38.8)
- HUM-299-KP 62.4/69.2 (PM 38.8/43.0)

VIII. IMPROVEMENTS NECESSARY TO ACHIEVE THE ROUTE CONCEPT

Improvements necessary to achieve the route concept for Route 299 include passing lanes to maintain the concept level of service through the 20-year period, and to mitigate barrier striping.

It is anticipated that passing lane improvements identified above will cost an estimated $5,000,000, in addition to the project currently programmed in the 1996 STIP.

In addition to new facility improvements listed, safety and operational improvements will be considered as necessary.

IX. TRANSIT AND HIGH OCCUPANCY VEHICLE (HOV) CONSIDERATIONS

Low population densities make it difficult to provide cost-effective, fixed-route transit services for most segments of Route 299. Intercity service between the Cities of Arcata and Redding has been initiated and discontinued a number of times by different transit providers. Regional transit service between the City of Arcata and the City of Blue Lake on Route 299, which was provided under contract with Humboldt Transit Authority, has been discontinued.

Due to the rural nature of Route 299 in District 1 and relatively low peak hour traffic volumes during commute hours, no HOV considerations are necessary.

X. ACCESS MANAGEMENT

Access management is not a concern along most of Route 299 in District 1. This Route is access controlled (freeway or expressway) from its junction with Route 101 to Berry Summit (KP 0.0/46.9 or PM 0.0/R29.13). Much of the land adjacent to the right of way between Berry Summit and the community of Willow Creek is held for timber production by private owners and the Forest Service. Between the community of Willow Creek and the Humboldt/Trinity County line, access management is a concern, as numerous individual private accesses result in low volumes of turning movements at many locations. These turning movements can impact highway operating characteristics.

XI. ADOPTIONS, RESCISSIONS AND RELINQUISHMENTS

No significant adoptions, rescissions, or relinquishments are anticipated on Route 299 in District 1.